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ABSTRACT

This study examined the effects of race/ethnicity and degree of acculturation on knowledge and attitudes about human immunodeficiency virus/Acquired Immune Deficiency Syndrome (HIV/AIDS). Subjects were 274 college students from 5 racial/ethnic groups (Whites, Blacks, Hispanics, Asian Americans, U.S. born, having an Asian origin with families that had resided in the country for more than two generations, and Asians--non-U.S. born and living in the United States for 1 to 9 years). Subjects completed the Attitude Toward AIDS Scale. Multivariate analysis of variance indicated significant differences on the Knowledge and Attitudes scales as well as the attitudes Issues and Persons subscale. Whites, Blacks, and Hispanics were more likely than Asian Americans and non-American born Asians to identify themselves as knowledgeable or very knowledgeable about HIV/AIDS and as having frequent access to HIV/AIDS information. Newspapers, television, and books were the most frequently mentioned sources of HIV/AIDS information for all five ethnic groups. Subjects answered correctly about 72% of the items on the Knowledge scale, reflecting a moderately high level of knowledge about HIV/AIDS. Asians demonstrated a significantly lower level of knowledge than did the other four groups. On the Attitudes scale, respondents were seen to show a moderately positive overall attitude, with a greater acceptance and support given to AIDS-related issues than to individuals infected by HIV or with AIDS. (NB)

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Ethnicity, Knowledge and Attitudes Toward Acquired Immune Deficiency Syndrome

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Paper presented at the American Psychological Association 1991 annual convention, August 16-20, San Francisco, CA

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Abstract

Two hundred and seventy four college students from five racial/ethnic groups were administered the Attitude Toward AIDS Scale (ATAS) to investigate the effects of race/ethnicity and degree of acculturation on knowledge and attitudes about HIV/AIDS. Multivariate analysis of variance indicated significant differences on the Knowledge and Attitudes scales as well as the attitudes Issues and Persons subscales of the ATAS among whites, blacks, Hispanics, Asian Americans, and Asians, although the former three groups did not differ significantly with each other. Main effects due to degree of access to HIV/AIDS information and level of knowledge about HIV disease and AIDS were also found; however, these variables did not interact significantly with race/ethnicity. Results were discussed in light of understanding people's knowledge and attitudes about the AIDS epidemic from a racial/ethnic perspective, as well as designing appropriate AIDS prevention and education programs for person's with different racial/ethnic backgrounds.

As the epidemic of Acquired Immune Deficiency Syndrome (AIDS) enters its second decade, it continues to spread in towering proportions. People in every race/ethnicity and community are being affected. The HIV/AIDS Surveillance report issued by the Center for Disease Control (CDC) in March, 1992 reported a total of 213,641 AIDS cases in the United States. An additional 1.5 million persons are commonly estimated to have been infected by the HIV virus (Jones, 1990). The CDC report also reveals that of the clinically diagnosed AIDS cases, about 54% are whites, 29% blacks, 16% Hispanics, 0.6% Asian/Pacific Islanders and 0.1% American Indian/Alaskan Natives. The disproportionately high AIDS incidence rates for blacks and Hispanics have raised considerable concerns about understanding the AIDS epidemic in ethnic minority communities. De La Cancela (1989) suggests that research on AIDS has been paying too little attention to the varied cultural values and social and economic conditions in many minority communities. It is for this reason, he believes, that implementation of AIDS prevention programs for minority groups are often unsuccessful and ineffective. This view is shared by many others and research is needed to examine the cultural and psychosocial correlates of the AIDS epidemic as related to various racial/ethnic populations. With findings from such research cultural-sensitive and effective AIDS prevention programs may be designed to meet the needs of different racial/ethnic communities.

Another problem in implementing effective AIDS prevention and

education programs is the lack of baseline data in terms of how much individuals already know about AIDS and their feelings towards the lethal disease and some related issues (Ross, 1988). During the past five years, a rising number of research on knowledge and attitudes about HIV/AIDS have appeared in the professional literature (e.g., Herek & Glunt, 1991, Brown & Fritz, 1988, etc.), with a few involving minority populations. In a study conducted by DiClemente, Boyer, and Morales (1988) in San Francisco, the authors found that white adolescents were more knowledgeable than black adolescents about the cause, transmission, and prevention of AIDS, and Latino adolescents were even less knowledgeable than their black peers. DeClemente, Zorn, and Temoshok (1987) in a separate study also conducted with adolescents in San Francisco found ethnic differences in knowledge about AIDS, with Asians having a lower overall knowledge score than Hispanics, blacks, and Caucasians. Thomas, Gilliam, and Iwrey (1989) surveyed a sample of black undergraduates at a large East Coast university, they found that overall, knowledge of basic AIDS-related facts was satisfactory. Selected questions on how HIV is transmitted, however, posed some problems for the respondents (e.g., less than 30% of the respondents knew that the AIDS virus was not transmitted by insect, etc). However, none of the three studies mentioned above reported on racial/ethnic comparisons on attitudes toward AIDS. Given the importance of the issue and the rather limited literature available, more research is clearly warranted. Therefore, the present study was designed to investigate the issue of knowledge of

and attitudes toward HIV/AIDS among several major racial/ethical samples, with a special focus on the effects of race/ethnicity and acculturation on the development of knowledge and attitudes about HIV/AIDS. In addition, effects of a number of selected subject variables (e.g., sex, education, access to HIV/AIDS information, etc.) were also examined across the racial/ethnic samples.

Method

Subjects

The subjects were 274 students attending a large public university in New York City. There were 103 males and 171 females, and 149 undergraduate and 125 graduate students in the entire sample. The mean age of the sample was 21.81 with a SD of 2.26. The subjects were categorized into 5 groups according to their race/ethnicity: Whites (n=77), Blacks (n=49), Hispanics (n=48), Asians I (n=50) and Asians II (n=50). The first three groups were all U.S. born citizens with Western origins. The fourth group comprised of Asian Americans. Subjects in this group were all U.S. born, have an Asian origin, and their families had resided in this country for more than two generations. On the other hand, subjects in the Asians II group were non-U.S. born, and they had lived in the U.S. for a rather short period of time (M=4.40, SD =2.92, range= 1 to 9 years). Compared to the other four groups, subjects in the Asian II group had shorter length of residence and lesser degree of exposure to the American culture. This group was included in the study to investigate whether degree of acculturation has an effect on a person's knowledge and attitudes toward HIV/AIDS. Group

distributions in terms of gender and education level (undergraduate and graduate) were similar among the five racial/ethnic groups.

Procedures

The subjects were administered The Attitudes Toward AIDS Scale (ATAS; Goh, 1990). The ATAS has two parts, each containing 20 items. The first part measures attitudes towards HIV/AIDS and the second part measures knowledge about HIV/AIDS. The Attitudes scale uses a 5-point Likert-type measurement and contains two subscales: Attitudes Toward Issues and Attitudes Toward Persons. The former measures a subject's attitudes toward HIV/AIDS related issues (i.e, confidentiality, AIDS education, funding, etc.) and the latter taps a subject's attitudes toward persons infected with HIV/AIDS. The knowledge scale, on the other hand, employs a true-false format and has no subscales. Adequate content validity, internal consistent and test-retest reliability of the ATAS have been reported by Goh (1990, 1991). In addition to the ATAS, a brief questionnaire was also administered to the subjects to gather demographic and other subject characteristics data. These included sex, age, ethnicity, marital status, length of residence in the U.S., self-reported degree of knowledge about HIV/AIDS, degree of access to HIV/AIDS information and sources of this information (i.e., newspaper, T.V., books, lecture, workshop, conversation, and contact with AIDS patients), and the subject's desire to learn more about the AIDS epidemic. In all cases, the ATAS was administered first, followed by the demographic questionnaire.

Results

Data on selected subject characteristics variables for the five racial/ethnic groups are shown in Table 1. All variables were measured along different nominal scales. "Knowledge about HIV/AIDS" refers to the subject's self-reported degree of knowledge about HIV disease and AIDS, "Desire to learn more" refers to the subject's desire to gain more knowledge about HIV/AIDS, "Access to information" indicates whether the subjects often read and/or listen to information about HIV/AIDS, and "Sources of information" indicates sources from which the subject has been getting information about HIV disease and AIDS. These data were analyzed by a series of chi-square analyses. The results indicated significant differences among the 5 groups on "Knowledge about HIV/AIDS" ($p<.05$). Greater proportions of subjects in the white, black, and Hispanic groups than in the 2 Asian groups felt they were either knowledgeable or very knowledgeable about HIV/AIDS. Meanwhile, of the latter 2 groups, more subjects in the Asian I group than the Asian II group believed they were knowledgeable or very knowledgeable. No significant differences due to race/ethnicity were found on "Access to information". For all five groups, a consistent majority of the subjects reported they often read or listen to information about HIV/AIDS. Data on <u>each</u> "Source of information" listed in Table 1 were measured on dichotomous variables and analyzed by chi-square procedures. As can be seen from this Table, newspaper and television were the two most frequently indicated sources for acquiring HIV/AIDS information for all 5 racial/ethnic groups, while attending workshops on HIV/AIDS

and contacts with AIDS patients were the two least commonly reported sources of information. Significant differences due to race/ethnicity were found (all $p<.05$) on all but two variables (newspapers and books). Television was used significantly less by the Asian II group than the other four groups as a source of obtaining HIV/AIDS information ($p<.01$). Attending lectures and workshops on AIDS were also less for the Asian II group than for the other groups (both $p<.01$). While about 50% of whites and blacks reported they gained information via everyday conversation, the percentages were significantly lower ($p<.01$) for the two Asian groups, at about 25%, with Hispanic groups fell in between. As expected, only a small number of the present subjects reported they had contacts with AIDS patients and used it as a source of information. Finally, on the "Desire to learn more" variable a majority of the subjects indicated that they would like to become more knowledgeable about HIV disease and AIDS. In particular, proportionately more subjects in the black and Hispanic groups demonstrated this desire than did the Asian II group ($p<.05$).

Insert Table 1 About Here

Table 2 displays the means and standard deviations for the Knowledge and Attitudes scales for the five racial/ethnic groups. The means for the entire sample were 15.14 (*SD* = 2.83) for the Knowledge scale and 41.02 (*SD* = 8.69) for the Attitudes scale. The means for the attitudes Issues and Persons subscales were 18.43 (*SD*

= 3.79), and 22.60 (SD = 6.03), respectively. Two mixed design multivariate analyses of variance were used to analyze the data in Table 2. The first analysis examined whether there was a significant effect due to race/ethnicity on the composite of the Knowledge and Attitudes scales. The analysis revealed a significant difference among the groups, Wilk's F = 10.99, p<.0001. Follow-up univariate analyses of variance showed significant between-group differences for the Knowledge, F(4,269) = 12.36, p<.0001, as well as for the Attitudes scales, F(4,269) = 18.27, p<.0001. Post hoc comparisons via Scheffe with X=.01 further demonstrated that (1) on the Knowledge scale the white, black, and Hispanic groups scored significantly higher than both of the Asian I and II groups, while the Asian I group scored significantly higher than the Asian II group; and (2) on the Attitude scale no significant differences were found among the white, black, and Hispanic groups; however, these three groups scored significantly lower than the two Asians groups which did not differ significantly with each other. The second MANOVA which was performed on the attitudes Issues and Persons subscales also revealed a significant effect due to race/ethnicity, Wilk's F = 9.21, p<.0001. Follow-up ANOVA indicated that the groups differed significantly on both the Issues, F(4,272) = 11.53, p<.0001, and Persons, F = 15.82, p<.0001, subscales. Post hoc Scheffe comparisons, at p<.01, demonstrated that (1) on the Issues subscale while no significant differences were found among the white, black, and Hispanics groups, these three groups scored significantly lower than the two Asian groups which did not differ

significantly with each other; (2) this same pattern of score differences was also found on the Persons subscale.

Insert Table 2 About Here

The data were then analyzed by a series of MANOVA to determine whether the group scores on the ATAS scales and subscales might be affected by selected subject variables including sex, education, degree of knowledge about HIV/AIDS, access to HIV/AIDS information, and desire to learn more about HIV/AIDS. The results revealed that while consistent race/ethnicity effects were found on all four dependent variables, main effects were also detected due to "degree of knowledge," $F(3,255) = 4.54$, $p<.05$, and "access to information," $F(1,236) = 10.38$, $p<.001$, on the Knowledge scale; "degree of knowledge," $F(2,255) = 10.94$, $p<.001$, and "access to information," $F(1,236) = 5.97$, $p<.05$, on the Attitudes scale; sex , $F(1,264) = 5.26$, $p<.05$, "degree of knowledge," $F(3,258) = 2.95$, $p<.05$, "access to information," $F(1,236) = 10.62$, $p<.001$, "desire to learn more," $F(2,262) = 5.29$, $p<.05$ on the attitudes Issues subscale; and "degree of knowledge," $F(3,258) = 3.78$, $p<.01$, and "access to information," $F(1,236) = 5.61$, $p<.05$, on the attitude Persons subscale. Thus, both "degree of knowledge" and "access to information" showed significant effects on all four knowledge and attitudes measures. Overall, those subjects who reported a higher degree of knowledge about HIV/AIDS or had more frequent access to HIV/AIDS information demonstrated higher scores on the Knowledge

scale and lower scores on the three Attitudes scales than those who reported otherwise. However, no significant interaction effects were found between race and these subject variable, except for "access to information" which showed a significant interaction with race/ethnicity on the Attitudes scale, $F(4,253) = 2.79$, $p<.05$, and the attitudes Persons subscale, $F(4,253) = 3.59$, $p<.01$. Followed up post hoc comparisons using the Scheffe procedure indicated that on the Attitudes scale, the difference score between those who have frequent access to AIDS information for Hispanics and Asian Americans were significantly greater than that for whites. Similarly, the difference score on the Persons subscale for Asian Americans was significantly higher than that of whites. In both cases, "access to information" did not significantly effect the attitudes scores of whites, but it did with Hispanics and Asian Americans on the Attitudes scale and with Asian Americans group on the attitude Persons subscale.

Discussion

The present study provides some interesting data on the usage of HIV/AIDS information and the development of knowledge of and attitudes toward HIV/AIDS among whites, blacks, Hispanics, Asian Americans, and Asians in a college population. In general, more than 60% of the college students with different race/ethnicity in the present study felt they were fairly knowledgeable about HIV disease and AIDS. More than 80% of the subjects reported that they often read and listen to HIV/AIDS information, and an equally higher proportion of subjects indicated that they would like to

obtain more information about HIV/AIDS. Nevertheless, significant differences were also detected among the racial/ethnic groups. While the whites, blacks, and Hispanics did not differ with each other on these variables, they were more likely to identify themselves as knowledgeable or very knowledgeable about HIV/AIDS and having frequent access to HIV/AIDS information than U.S. born Asian Americans and non-U.S. born Asians with short length of residence in the states. This general pattern of racial/ethnic differences also existed in terms of various sources from which the subjects obtained access to HIV/AIDS information.

Overall, newspapers, television, and books were the most frequently mentioned sources of HIV/AIDS information for all five ethnic groups. White, black and Hispanic students, however, often used more varied sources than students in the two Asian samples. Differences in types of sources of information were also noted. More students in the former groups used both informal (i.e., newspapers, T.V., and everyday conversation) and formal (i.e., books, lectures, workshops) sources to gain information about HIV disease and AIDS. This pattern of sources of information was also reported by Asian Americans, although to a lesser extent. Comparatively, knowledge about HIV/AIDS for students in the Asian group came most often from informal sources (i.e., newspapers, T.V.).

On average, the present sample answered correctly about 72% of the items on the Knowledge scale, reflecting a moderately high level knowledge about HIV/AIDS and the AIDS epidemic. Asians

demonstrated a significant lower level of knowledge than the other four racial/ethnic groups including the Asian Americans.

On the attitudes scales, the present sample is seen to show a moderately positive overall attitude, with a greater acceptance and support given to AIDS-related issues than to individuals infected by the HIV virus or with AIDS. The pattern of difference on knowledge among the groups was again noted here, but with one significant change. Specifically, attitudes scores for Asian American students were similar to that of non-U.S. born Asian students than to students in the other three racial/ethnic groups. While the Asian groups maintained a somewhat positive attitude toward issues related to the AIDS epidemic, their attitudes toward persons with AIDS can best be described as somewhat indifferent and reserved, but non-discriminatory.

The rather consistent findings with regard to the effects of race/ethnicity on the dependent variables investigated in the present study are meaningful. Race/ethnicity was non-significant in separating the white, black, and Hispanic college students in terms of their usage of HIV/AIDS information and the development of knowledge of and attitudes toward HIV/AIDS, however, significant differences were revealed on these variables between the these students and their Asian American and/or Asian counterparts. The general pattern of difference on the variables was: highest scores (or lowest in some cases) for the three groups with Western origins followed by the Asian American sample and in sequence by the Asian sample, with a few exceptions of non-significant differences

between the Western groups and the Asian American sample, and/or between the Asian American and Asian samples. This pattern of findings indicates a significant effect due to race/ethnicity as well as degree of acculturation. For example, the lowest scores observed on many of the variables for the Asian sample as compared to the other four groups are seen in particular as attributable to their relatively short length of residence in the U.S., limited exposure to the American culture, and limited English proficiency. It is particularly worthy to note that although the Asian American students demonstrated equal levels of knowledge about HIV/AIDS as the white, black, and Hispanic students, their attitudes as measured on the ATAS were actually more similar to that of the Asians than of the white, black, and Hispanic students. This finding may well suggest that while length of residence in the U.S. appears to be a significant factor in the acquisition of knowledge about HIV/AIDS, degree of acculturation, on the other hand, may be more important to the development one's attitudes toward HIV/AIDS. Finally, besides race/ethnicity and degree of acculturation, the most conspicous subject variables with significant effects on both knowledge of and attitudes toward HIV/AIDS were a person's degree of access to HIV/AIDS information and knowledge of HIV disease and AIDS. These effects were consistently observed across all five racial/ethic groups included in the present study. The lack of significant interactions between race/ethnicity and these variables indicate that "access to HIV/AIDS information" and "degree of knowledge about HIV/AIDS" of the target population should be

considered in the design of an AIDS prevention and education program, regardless of the population's racial or ethnic backgrounds.

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Table 1

Proportional distributions on selected subject variables

Variable	White	Black	Hispanic	Asian I	Asian II
Knowledge About HIV/AIDS					
Very Knowledgeable	14.3	12.0	13.9	12.5	7.1
Knowledgeable	51.9	60.0	55.6	44.4	32.1
Somewhat Knowledgeable	31.2	28.0	27.8	33.3	58.9
Not Knowledgeable	1.3	0.0	2.8	9.7	1.8
Access To Information					
Often	85.7	82.8	83.8	71.8	72.7
Sometimes	13.3	17.2	10.8	22.5	25.5
Not at All	1.0	0.0	5.4	5.6	1.8
Source of Information					
Newspaper	90.9	88.0	77.8	84.7	80.4
Television	87.0	92.0	72.2	76.4	60.7
Books	46.1	64.0	38.9	33.3	39.3
Lectures	54.5	40.0	61.1	36.1	5.4
Workshops	27.3	20.0	27.8	18.1	1.8
Conversation	46.8	52.0	36.1	26.2	25.0
AIDS patients	13.0	0.0	16.7	0.0	0.0
Desire To Learn More					
Yes	76.6	80.0	83.3	72.2	69.6
No	11.7	8.0	2.8	20.8	8.9
Not Sure	11.7	12.0	13.9	6.9	21.4

Table 2

Means and Standard Deviations on the Knowledge and Attitudes Scales for the five racial/ethnic groups

Group	Knowledge		Attitudes					
			Issues		Persons		Total	
	M	SD	M	SD	M	SD	M	SD
White	16.23	2.14	17.33	3.46	20.19	5.36	37.55	7.82
Black	15.68	1.91	17.21	3.01	20.71	4.50	37.93	6.63
Hispanic	15.49	2.43	17.11	3.21	20.38	5.35	37.49	6.51
Asian I	14.78	2.76	19.32	3.75	25.22	6.12	44.51	8.50
Asian II	13.12	3.50	20.86	3.81	26.04	5.31	46.90	8.05